



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/963,284	09/25/2001	Patrick L. Connor	42390.P12265	9640

7590

09/13/2005

Lance A. Termes
BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP
Seventh Floor
12400 Wilshire Boulevard
Los Angeles, CA 90025-1026

EXAMINER

PHAN, MAN U

ART UNIT

PAPER NUMBER

2665

DATE MAILED: 09/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/963,284

Applicant(s)

CONNOR ET AL.

Examiner

Man Phan

Art Unit

2665

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 September 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-9,12,14-19 and 21-27 is/are rejected.
- 7) ☒ Claim(s) 2,10,11,13,20,28 and 29 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. The application of Connor et al. for "Methods and apparatus for retaining packet order in systems utilizing multiple transmit queues" filed 09/25/2001 has been examined. Claims 1-29 are pending in the application.

Double Patenting

2. A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain : patent therefor ..." (Emphasis added). Thus, the term "same invention" in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686

Art Unit: 2665

F.2d 937, 214 USPQ 761 (CCPA 1982); In re Vogel, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, In re Thorington, 418 F.2d 528, 163 USPQ 644 (CCPA 196%.

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37CFR 3.7309.

4. Claims 1-29 are rejected under the judicially created doctrine of double patenting over claims 1-27 of U. S. Co-pending Application No. 10/143,466 (US2003/0058878). This is a provisional double patenting rejection since the conflict claims have not yet been patented.

Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims are equivalent in scope and embodiment. The language of the two claims is equivalent in functioning. The subject matter claimed in the instant application is fully disclosed in the referenced co-pending application and would be covered by any patent granted on that co-pending application since the referenced co-pending application and the instant application are claiming common subject matter, as follows:

With respect to the specific limitations, claims 1, 3-5 and 7-9 and 2, 25 and 12, 14-16, 18, 19 of co-pending application 10/143,466 are equivalent to the pending claims 1, 3-5 and 6-9 and 12, 14-17 and 19, 21-27 of Application '284 respectively for defining at least two transmit queues for a priority level group. All of the structural elements of the co-pending claims are

Art Unit: 2665

present in the pending claims, defined with either identical or equivalent language. Additionally, the functional language, although varying in syntax, reflects identical operation, purpose, application, and environment.

Furthermore, there is no apparent reason why applicant would be prevented from presenting claims corresponding to those of the instant application in the other co-pending application. It has been held that the omission of an element and its function is an obvious expedient if the remaining elements perform the same function as before. In re Karlson, 136 USPQ 184 (CCPA). Also note Ex parte Rainu, 168 USPQ 375 (Bd. App. 1969); omission of a reference element whose function is not needed would be obvious to one skilled in the art.

Claim Rejections - 35 USC ' 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out

Art Unit: 2665

the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 1, 6, 12, 18, 19 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lu (US#6,480,911) in view of Chuang (US#5,371,864).

With respect to claim 12, 18, Lu (US#6,480,911) and Chuang (US#5,371,864) disclose a novel system and method for a class queuing system where data is placed and processed in queues distinguished by class, according to the essential features of the claims. Lu (US#6,480,911) discloses in Figs. 4 & 5 block diagrams illustrated the class queuing management system with their structure and organization. As shown, The class queuing system distinguishes one class from another based on desired characteristics of a host process such as a network process. The class queuing system establishes a plurality of class queues; placing queued data in the class queues according to a plurality of classes (*defining at least two transmit queues for a priority level group*), each of the queued data being placed in one of the class queues based on a class of the queued data; grouping the class queues into groups based on a number of output ports of an output, each group of the groups corresponding to one of the output ports; and separating class queues of each group into a plurality of levels of queues between an input and the output; assigning to each level of the levels a corresponding weight set of the weight sets, the corresponding weight set setting an output priority for corresponding queues of each level (*each of the transmit requests corresponding to a packet having a priority designation and a flow characteristic*) (Col. 1, lines 21 plus and Col. 13, lines 16 plus).

However, Lu does not disclose expressly the step of processing the at least two transmit requests substantially in parallel. In the same field of endeavor, Chuang (US#5,371,864) discloses a data processing apparatus for simultaneously reading out groups of two or more contiguous, variable length instructions from memory, and for decoding the group of variable length instructions in parallel (*processing the at least two transmit requests substantially in parallel*). The data processing apparatus has a memory containing at least first, second, and third contiguous instructions, and at least first, second, and third read ports for receiving starting addresses and for reading out the instructions from the memory (Fig. 1; Col. 1, lines 32 plus).

Regarding claims 1 and 6, they are method claims corresponding to the apparatus claim 12 above. Therefore, claims 1, 6 are analyzed and rejected as previously discussed with respect to claim 12.

Regarding claims 19 and 24, these claims differ from claims Lu in view of Chuang in that the claims recited a computer program product for performing the same basis of steps and apparatus of the prior arts as discussed in the rejection of claims 1, 6 and 12. It would have been obvious to a person of ordinary skill in the art to implement a computer program product in Lu in view of Chuang for performing the steps and apparatus as recited in the claims with the motivation being to provide an efficient enhancement to the processing of multiple transmit queues, and easy to maintenance, upgrade.

One skilled in the art would have recognized the need for processing multiple transmit requests in parallel, and would have applied Chuang's teaching of the processing of multiple instruction simultaneously from memory into Lu's novel use of a queue management system.

Therefore, It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to apply Chuang's apparatus for concurrent multiple instruction decode in variable length instruction set computer into Lu's grouping class sensitive queues with the motivation being to provide a method and system for processing multiple transmit requests in parallel.

8. Claims 3-5, 8, 9, 14-17, 21-23 and 25-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lu (US#6,480,911) in view of Chuang (US#5,371,864) as applied to the claims above, and further in view of Stacey et al. (US#6,654,376).

With respect to claims 14-17, Lu (US#6,480,911) and Chuang (US#5,371,864) disclose the claimed limitations discussed in paragraph 7 above. However, these claims differ from the claims above in that the claims require the feature wherein the priority level group comprises a single priority level and two or more priority level. In the same field of endeavor, Stacey et al. (US#6,654,376) discloses in Fig. 3 a flow chart illustrated a modified scheduling algorithm, in which the algorithm may be used in applications whereby all received packets are assumed to be of equal priority and in this scenario, packets are scheduled strictly in accordance to their arrival (i.e. first come first served). Alternatively the algorithm may be extended to support any number of levels of packet priority and in this scenario the scheduling of a packet is a function of its arrival order, its priority class and the priority scheduling scheme implemented. Again, the algorithm of Fig. 3 can be used either to support a single priority level or multiple levels (Col. 8, lines 15 plus and Col. 9, lines 42 plus).

One skilled in the art would have recognized the need for processing multiple transmit requests in parallel, and would have applied Stacey's single priority and two or more priority level for the packet level priority in scheduling algorithm, and Chuang's teaching of the processing of multiple instruction simultaneously from memory into Lu's novel use of a queue management system. Therefore, It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to apply Stacey's ATM packet scheduler Chuang's apparatus for concurrent multiple instruction decode in variable length instruction set computer into Lu's grouping class sensitive queues with the motivation being to provide a method and system for processing multiple transmit requests in parallel.

Allowable Subject Matter

9. Claims 2, 10, 11, 13, 20 and 28, 29 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is an examiner's statement of reasons for the indication of allowable subject matter: The closest prior art of record fails to disclose or suggest wherein execution of the instructions by the plurality of processors further causes the apparatus to process the two or more transmit requests substantially in series and queue the packets together in one of the at least two transmit queues in response to a determination that the packets have equivalent flow characteristics; wherein assigning each of the at least two packets to one of the at least two transmit queues comprises correlating an output generated by an algorithm with a defined value associated uniquely with each of the at least two transmit queues as specifically recited in claims.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The Aimoto (US#6,570,876) is cited to show the packet switch and switching method for switching variable length packets.

The Opalka et al. (US#6,259,699) is cited to show the system architecture for and method of processing packet and/or cells in a common switch.

The Tzeng (US#6,438,135) is cited to show the dynamic weighted round robin queueing.

The Harrison et al. (US#6,091,709) is cited to show the quality of service management for packet switched network.

The Leung (US#6,466,580) is cited to show the method and apparatus for processing high and low priority frame data transmitted in a data communication system.

The Angle et al. (US#6,661,788) is cited to show the multicast scheduling for a network device.

The Cherukuri et al. (US#6,732,209) is cited to show the data rate division among a plurality of input queues.

The Aimoto (US#6,570,876) is cited to show the packet switch and switching method for switching variable length packets.

The Yamamoto (US#2002/0097733) is cited to show the packet transmitting apparatus.

The Shiobara (US#5,699,519) is cited to show the data transmission method and apparatus applicable to network system.

The Beach et al. (US#6,404,772) is cited to show the voice and data wireless

Art Unit: 2665

communications network and method.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to M. Phan whose telephone number is (571) 272-3149. The examiner can normally be reached on Mon - Fri from 6:00 to 3:00.

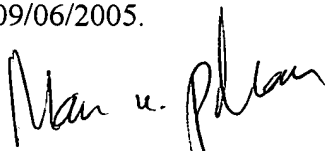
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu, can be reached on (571) 272-3155. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-2600.

12. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have any questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at toll free 1-866-217-9197.

Mphan

09/06/2005.


MAN U. PHAN
PRIMARY EXAMINER